Appendix I – Correspondence

Page intentionally blank

PP2 Peggy Shute

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

105 West Park Drive, Suite D
Athens, Georgia 30606

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

RECEIVED
Environmental Policy and Planning

Coastal Sub Office
4270 Norwich Street
Brunswick, Georgia 31520

AUG 17 2005

Doc. Type:
Index Field:
Project Name:
Project No.:

Mr. Jon M. Loney, Manager
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, TN 37902-1401

RE: Early Coordination Request new TVA transmission line in Gordon, Murray and Whitfield Counties.

FWS Log #: NG-05-705-WHIT

Dear Mr. Loney:

Thank you for your July 26, 2005 letter regarding the construction of a new transmission line in Gordon, Murray, and Whitfield counties. We submit the following comments under provisions of the Endangered Species Act of 1973 as amended, (16 U.S.C. 1531 et seq.)

The proposed project would extend 15.5 miles from TVA's existing Center Point Substation, south of Dalton, to the proposed Moss Lake Substation, east of Calhoun. Over 12 miles of the transmission line would be new right-of-way and 3.3 would be on existing vacant right-of-way. The construction would require 3 stream crossings of the Conasauga River and 1 of the Coosawattee.

The segment of the river that could be impaired by transmission line construction has been designated as critical habitat for 7 species of federally listed mussels. Critical habitat is a specific geographic area(s) that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery.

We request that all information regarding this project be provided to this office. This includes, but is not limited to, alternatives analysis, buffer ordinances, stream crossing guidelines, and right-of-way maintenance adjacent to stream crossings. Below are some of the typical recommendations our office has made for transmission lines in sensitive habitat. Because this project would encompass critical habitat, additional recommendations may be necessary.

- Maintain a 100-foot riparian buffer within the ROW on both sides of streams where listed species reside. Construction of temporary streams crossings in these areas is prohibited. The buffer, when possible, should be retained in or planted to native vegetation of at least shrub size.

- Maintain a 50-foot riparian buffer within the ROW on both sides of other streams that will be crossed during installation of the powerline. Some vegetation within these buffer zones may be temporarily disturbed if culverts, fords, or other temporary stream crossings are necessary, but streambanks should be restored to normal contours and stabilized after the temporary crossing is removed. The buffer, when possible, should be retained in or planted to native vegetation of at least shrub size.
- Leave fallen or cut trees in place, when possible, in the buffer zone. Trees that must be cleared should be removed with a minimum of ground disturbance (e.g., winched using heavy equipment operating outside the buffer), and root systems should be retained in the ground.
- Maintain the powerline ROW on a minimum three-year schedule.
- Conduct work in streams where temporary culvert installation/removal and use of fords is authorized during periods outside of the 'species of interest' spawning season.
- Locate all staging areas and equipment maintenance areas at least 200 feet from stream banks.

We look forward to continuing consultation on this project. An updated species list has been attached. If you have any questions or require further information, please contact Assistant Biologist Eric Prowell or Staff Biologist Robin Goodloe at 706-613-9493.

Sincerely,

Sandra S. Tucker
Field Supervisor

Updated List of Threaten/Endangered Species (Gimore, Murray, and Whitfield)

Scientific Name	Common Name	Federal Status	State Status	Location/County(ies)
Cyprinella caerulea	Blue shiner	Threatened	Endangered	Upper Coosa
Etheostoma brevirostrum	Holiday darter	None	Threatened	Conasauga\Coosawattee
Etheostoma ditrema	Coldwater darter	None	Threatened	Conasauga
Etheostoma trisella	**Trispot darter**	**None**	**Threatened**	**Conasauga\Coosawattee**
Hemitremia flammea	Flame chub	None	Endangered	Coosa
Noturus munitus	Freckledbelly madtom	None	Endangered	Conasauga
Percina antesella	Amber darter	Endangered	Endangered	Upper Coosa
Percina aurolineata	Goldline darter	Threatened	Threatened	Coosawatte
Percina jenkinsi	**Conasauga logperch**	**Endangered**	**Endangered**	**Conasauga**
Percina lenticula	Freckled darter	None	Endangered	Coosa
Percina shumardi	River darter	None	Endangered	Coosa
Epioblasma metastriata	Upland combshell	Endangered	Endangered	Gordon, Murray, Whitfield
Epioblasma othcaloogensis	Southern acornshell	Endangered	Endangered	Gordon, Murray, Whitfield
Lampsilis altilis	**Fine-lined pocketbook**	**Threatened**	**Threatened**	**Murray, Whitfield**
Medionidus acutissimus	**Alabama moccasinshell**	**Threatened**	**Threatened**	**Conasauga**
Medionidus parvulus	**Coosa moccansinshell**	**Endangered**	**Endangered**	**Conasauga**
Medionidus penicillatus	Gulf moccansinshell	Endangered	Endangered	Murray
Pleurobema chattanoogaense	Painted clubshell	Candidate	Endangered	Murray, Whitfield
Pleurobema decisum	**Southern clubshell**	**Endangered**	**Endangered**	**Conasauga**
Pleurobema georgianum	**Southern pigtoe**	**Endangered**	**Endangered**	**Conasauga**
Pleurobema hanleyianum	Georgia pigtoe	Candidate	Endangered	Murray, Whitfield
Pleurobema perovatum	**Ovate clubshell**	**Endangered**	**Endangered**	**Murray, Whitfield**
Pleurobema troschelianum	Alabama clubshell	Candidate	Threatened	Murray, Whitfield
Ptychobranchus greenii	**Triangular kidneyshell**	**Endangered**	**Endangered**	**Conasauga\Coosawattee**
Arabis georgiana	Georgia rock-cress	Candidate	Threatened	Gordon
Scutellaria montana	Large-flowered skullcap	Threatened	Threatened	Gordon, Murray, Whitfield
Xyris tennesseensis	Yellow-eyed grass	Endangered	Endangered	Gordon, Whitfield
Hydrastis canadensis	Golden Seal	None	Endangered	Murray
Carex purpurifera	Purple sedge	None	Threatened	Gordon, Murray
Thalictrum debile	Trailing meadowrue	None	Threatened	Gordon

Fish-Blue
Mussels-Red
Plants-Green

Bold-Endemic to location
Bold-Designated as critical habitat

Georgia Department of Natural Resources

Noel Holcomb, Commissioner

Historic Preservation Division

W. Ray Luce, Division Director and Deputy State Historic Preservation Officer
34 Peachtree Street NW, Suite 1600, Atlanta, Georgia 30303-2316
Telephone (404) 656-2840 Fax (404) 657-1040 http://www.gashpo.org

June 15, 2006

Mr. J. Bennett Graham
Manager and Senior Archaeologist
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1401

RE: Center Point-Moss Lake Transmission Lines & Substation near Dalton & Calhoun
Gordon and Whitfield Counties, Georgia
Federal Agency: TVA
HP-050112-004

Dear Mr. Graham:

The Historic Preservation Division (HPD) has reviewed the information contained in the *Cultural Resource Survey for the Proposed Center Point-Moss Lake Transmission Line, Gordon and Whitfield Counties, Georgia,* prepared May 2006 by TRC, along with your comments dated May 15, 2006. Our comments are offered to assist federal agencies and their applicants in complying with the provisions of Section 106 of the National Historic Preservation Act, as amended.

After reviewing the above-referenced report, we offer the following comments regarding the archaeological survey. We concur that sites 9GO263, 9GO265, and 9GO266 should be considered ineligible for inclusion in the National Register of Historic Places (NRHP). We also concur that site 9WD149 should be considered eligible for the NRHP, but that, as it has been rerouted, the transmission line will have no effect on it. However, we do not concur with the recommendation that site 9GO269 is ineligible for the NRHP. It appears to be a better site than most of those whose eligibility status remains "undetermined" and, given that it also has not been fully delineated, we believe that its eligibility status is undetermined. Finally, while a survey should ideally delineate sites and make definitive NRHP recommendations about them, we realize that private property concerns sometimes make this difficult. Therefore, we concur with the recommendations that the remaining 22 sites are of undetermined eligibility, but that the proposed transmission line will have no adverse effect on them.

Regarding the architectural survey, it appears that the identification efforts and eligibility assessments were thorough and well documented. We concur with all eligibility determinations, except one. At this time we are unable to concur that Resource HS-12 (the ranch house) is eligible for inclusion in the NRHP.

Regarding assessments of effect for buildings and structures, we believe that more information is needed for a few of the resources. We were unable to find a project description that specifically addressed the height and placement of the transmission poles. Since the right-

of-way is 100 feet wide, are we to presume that all trees will be removed within this corridor? This information is relevant in the few instances when the boundaries of eligible resources appear to be extremely close to the transmission corridor.

Specifically, we need to know more about the potential visual effects to WD-716 and WD-717. When the report states that existing roads and transmission lines already compromise the viewshed, it would be useful to have a graphic or visual representation showing existing conditions as compared to the proposed changes to the viewshed. Normally, we do not consider small county roads and traditional domestic transmission lines as visual intrusions on the same scale as large transmission corridors. In these instances, additional photos and/or an expanded site plan showing the relationship between house/outbuilding complexes and the proposed transmission corridor would be useful. If trees help reduce the potential impact, please indicate their location and approximate height.

Finally, we do have some concerns about the effect on the New Echota Historic Site, which is listed on the NRHP and is also a National Historic Landmark (NHL). Because of the NHL designation, it is our understanding that the federal agency should obtain comments from the National Park Service. You may also wish to include the state site manager on your list of consulting parties. Please provide more information on the viewshed from the eastern portion of the park, including exact distances from the transmission corridor and photographs of this area. The fact that this is the least developed portion of the park does not mean that it is the least significant in terms of cultural landscapes.

We look forward to working with you in completing the consultation process for this undertaking. Please include three copies of the final report, and refer to the project number referenced above in any future correspondence regarding this matter. If we may be of further assistance, please contact Elizabeth Shirk, Environmental Review Coordinator at (404) 651-6624, or Denise Messick, Environmental Review Historian at (404) 651-6777.

Sincerely,

Karen Anderson-Córdova
Manager, Planning and Local Assistance Unit

KAC:dpm

cc: Michael J. Wild, TRC
Dan Latham, Jr., Coosa Valley RDC
Kevin McAuliff, North Georgia RDC
Mark Barnes, National Park Service, SE Regional Office
Site Manager, New Echota Historic Site, 1211 Chatsworth Hwy., Calhoun, GA 30701

Eastern Band of Cherokee Indians
Tribal Historic Preservation Office
P.O. Box 455
Cherokee, NC 28719
Ph: 828-488-0237 Fax 828-488-2462

DATE: 21 - June - 06

TO: Tennessee Valley Authority
Patricia B. Ezzell
Historian
400 West Summit Hill Drive
Knoxville, TN 37902-1401

PROJECT(S): **Proposed Center Point-Moss Lake Transmission Line, Gordon & Whitfield Counties, Georgia.**

The Tribal Historic Preservation Office of the Eastern Band of Cherokee Indians is in receipt of the above-referenced project information and would like to thank you for the opportunity to comment on this proposed NHPA Section 106 activity.

This office agrees with the archeologist's recommendations that no significant cultural resources were discovered during the recent archeological investigation. TRC recommended that the construction of the power line within the extreme eastern portion of the New Echota, a Traditional Cultural Property, will not impact any significant cultural resources. While the eastern portion of the New Echota site is indeed undeveloped with a mixture of hardwoods, this office was unable to discover sufficient data to make comments. Sufficient cultural resource data was not included in the Cultural Resource Survey. Site 9GO36, a late Paleoindian to Woodland artifact scatter, is located near the transmission line, within the APE.

Site 9GO36 is listed as "None" for NRHP Recommendation. Does this mean this site is ineligible for inclusion in the NRHP? Furthermore, this office requests information regarding the potential hazards that heavy equipment can pose to unknown sites. New Echota is a very important site, historically and culturally, for the Eastern Band of Cherokee Indians. While TRC may believe that the extreme eastern portion of the site is "largely undeveloped" it is not necessarily potentially important. While the EBCI THPO recognizes the majority of the historic structures and historic town of New Echota is not in this eastern portion, there were numerous outlying Cherokee farm sites around New Echota, with the potential for grave yards and human remains. This office requests data regarding potential effects to the viewshed, and hazards from heavy equipment, as well as further information on archeological data for those sites east of New Echota within the APE.

In the event that cultural resources are inadvertently discovered, all work should cease and immediate Section 106 consultation between the federal government and the sovereign Indian nation of the Eastern Band of Cherokee Indians should begin.

If we can be of further service, or if you have any comments or questions, please feel free to contact me at (828) 488-0237 ext 2.

Sincerely,

Tyler B. Howe
Tribal Historical Preservation Specialist
Eastern Band of Cherokee Indians

OFFICE OF PLANNING AND BUDGET

Sonny Perdue
Governor

Shelley C. Nickel
Director

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Mr. Hugh Barger
Tennessee Valley Authority

FROM: Barbara Jackson BJ
Georgia State Clearinghouse

DATE: December 15, 2006

SUBJECT: Solicitation for Pre-Comments Regarding: Moss Lake Substation and Moss Lake-Center Point, 230/115-kV Transmission Line

Your material concerning the above was received on December 15, 2006. You indicated that you have already contacted directly one of our reviewing agencies, Georgia HPD.

I have forwarded the material on to several other selected reviewers. However, please understand that some of them may elect to wait and review the EA before commenting on the project.

Our primary function will be to coordinate intergovernmental review of the EA once it is ready. We ask that 6 copies of the EA, along with a cover letter/memo, be submitted to this office.

/bj
Encl.

Office: 404-656-3855

AN EQUAL OPPORTUNITY EMPLOYER
270 Washington Street, S.W., Atlanta, Georgia 30334

Fax: 404-656-7916

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Anita Masters
Tennessee Valley Authority
1101 Market Street, MR 2T-C
Chattanooga, TN 37402

FROM: Barbara Jackson

DATE: 5/16/2007

SUBJECT: Executive Order 12372 Review

APPLICANT: Tennessee Valley Authority

PROJECT: Draft EA: Center Point-Moss Lake 230/115-kv Transmission Line and Moss Lake Substation (Gordon & Whitfield Counties, GA)

CFDA #:

STATE ID: GA070516003

FEDERAL ID:

Correspondence related to the above project was received by the Georgia State Clearinghouse on 5/16/2007. The review has been initiated and every effort is being made to ensure prompt action. The proposal will be reviewed for its consistency with goals, policies, plans, objectives, programs, environmental impact, criteria for Developments of Regional Impact (DRI) or inconsistencies with federal executive orders, acts and/or rules and regulations, and if applicable, with budgetary restraints.

The initial review process should be completed by 6/14/2007 (*approximately*). If the Clearinghouse has not contacted you by that date, please call (404) 656-3855, and we will check into the delay. We appreciate your cooperation on this matter.

In future correspondence regarding this project, please include the State Application Identifier number shown above. If you have any questions regarding this project, please contact us at the above number.

Form SC-1
Nov. 2006

United States Department of the Interior

U.S. FISH AND WILDLIFE SERVICE

105 West Park Drive, Suite D
Athens, Georgia 30606

West Georgia Sub Office
P.O. Box 52560
Ft. Benning, Georgia 31995-2560

Coastal Sub Office
4270 Norwich Street
Brunswick, Georgia 31520

June 15, 2007

Ms. Peggy W. Shute
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

Re: Center Point-Moss Lake 230/115-KV Transmission Line and Moss Lake Substation
FWS Log NG-07-380-Whit

Dear Ms. Shute:

The Fish and Wildlife Service has reviewed the June 2007 draft Environmental Assessment (EA) for the referenced project. The Tennessee Valley Authority (TVA) proposes to construct a new 15.5-mile transmission line from the Center Point Substation south of Dalton to a new TVA Moss Lake Substation near Calhoun, Gordon and Whitfield Counties. We submit the following comments on this project under provisions of Section 7(a)(2) of the Endangered Species Act of 1973 as amended (16 U.S.C. 1531 et seq.).

The proposed new line and access road will cross 29 perennial or intermittent streams or ponds and 12 wetlands, including three crossings of the Conasauga River and one crossing of the Coosawattee River. These basins support populations of over ten listed fish and mussels, and critical habitat has been designated in the area of the new line for eight mussel species. TVA has incorporated recommendations on project design that this office made in August 2005 and February 2007 to protect these listed species and critical habitat, including maintaining wide buffers on perennial and intermittent streams and prohibiting temporary crossings of streams where populations of listed species occur.

TVA has determined that the proposed project is not likely to adversely affect federally listed species. We concur with this determination. Requirements of Section 7 of the Endangered Species Act have been satisfied. However, obligations under the Act must be reconsidered if (1) the project is modified in a manner not considered in this assessment; (2) a new species is listed or critical habitat is determined that may be affected by the project; or (3) new information indicates that the project may affect listed species or critical habitat in a manner not considered.

Please contact staff biologist Robin Goodloe at (706) 613-9493 X221 if you have questions or require additional information.

Sincerely,

Sandra S. Tucker
Field Supervisor

OFFICE OF PLANNING AND BUDGET

Sonny Perdue
Governor

Shelley C. Nickel
Director

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Anita Masters
Tennessee Valley Authority
1101 Market Street, MR 2T-C
Chattanooga, TN 37402

FROM: Barbara Jackson BJ
Georgia State Clearinghouse

DATE: 6/18/2007

SUBJECT: Executive Order 12372 Review

PROJECT: Draft EA: Center Point-Moss Lake 230/115-kv Transmission Line and Moss Lake Substation (Gordon & Whitfield Counties, GA)

STATE ID: GA070516003

The applicant/sponsor is advised that the Soil & Water Conservation Commission was included in this review but did not comment within the review period. Should they later submit comments, we will forward to you.

The applicant/sponsor is advised that although North Georgia RDC responded initially, final comments from them have not been received within the review period. Should they later submit comments, we will forward to you.

The applicant/sponsor is advised to note important comments from Coosa Valley RDC and DNR's EPD/Flood Plain Management.

The applicant/sponsor indicated that they have been coordinating directly with DNR's Historic Preservation Division, one of our state reviewers.

/bj
Enc.: Coosa Valley RDC, June 4, 2007
North Georgia RDC, May 29, 2007
DOT, May 25, 2007
EPD/Flood Plain Mgt, June 13, 2007

Form NCC
January 2004

AN EQUAL OPPORTUNITY EMPLOYER
Office: 404-656-3855 270 Washington Street, S.W., Atlanta, Georgia 30334 Fax: 404-656-7916

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

N O T E:

Applicant: Tennessee Valley Authority
Project: Draft EA: Center Point-Moss Lake 230/115-kv Transmission Line and Moss Lake Substation (Gordon & Whitfield Counties, GA)
State ID: GA070516003

Applicant: North Georgia EMC
Project: RDUG Loan: North Resaca Substation Site (located 1131 Nicklesville Road, Gordon County, GA) [CWP Project No. 435-01]
State ID: GA070521001

From my telephone conversation with Mr. Howerin at Coosa Valley RDC, he believes that certain aspects of the above-referenced projects will overlap and, therefore, has addressed comments of concern and suggestions together for both projects.

Barbara Jackson

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: MR. DAVID HOWERIN
COOSA VALLEY RDC

SUBJECT: Executive Order 12372 Review

APPLICANT: Tennessee Valley Authority

PROJECT: Draft EA: Center Point-Moss Lake 230/115-kv Transmission Line and Moss Lake Substation (Gordon & Whitfield Counties, GA)

STATE ID: GA070516003

FEDERAL ID:

DATE: June 4, 2007

☑ This notice is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned. (see attached comments)

This notice is not consistent with:

☐ The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word or words and prepare a statement that explains the rationale for the inconsistency. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID number on all pages).

☐ The criteria for developments of regional impact, federal executive orders, acts and/or rules and regulations administered by your agency. Negative environmental impacts or provision for protection of the environment should be pointed out. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID number on all pages).

☐ This notice does not impact upon the activities of the organization.

NOTE: Should you decide to FAX this form (and any attached pages), it is <u>not</u> necessary to mail the originals to us.

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JUN 04 2007
GEORGIA
STATE CLEARINGHOUSE

Form SC-3
May 2007

COOSA VALLEY REGIONAL DEVELOPMENT CENTER

P.O. Box 1793 Rome, Georgia 30162-1793
RDC Fax (706) 295-6665 AAA Fax (706) 802-5508 WIA Fax (706) 802-5567
Phone (706) 295-6485 E-Mail: cvrdc@cvrdc.org www.cvrdc.org

June 4, 2007

Ms. Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, S.W.
Eighth Floor
Atlanta, Georgia 30334

Dear Ms. Jackson:

RE: GA070521001 and GA070516003

The Coosa Valley RDC recommends that the potential visual effects of the transmission line to the Resaca Battlefield be addressed in the Environmental Assessment. The greatest potential for visual effects likely would be to the northeastern portion of the battlefield, east of U.S. Highway 41. For additional information, please refer to the following reports prepared by The Jaeger Company for the Historic Preservation Division, Georgia Department of Natural Resources, and the American Battlefield Protection Program, National Park Service, U. S. Department of the Interior: (1) *Resaca Civil War Resources Preservation Plan*, July 1995; and *Atlanta Campaign Historic Resources Survey, Phase I*, February 2000. Gordon County is concerned about the potential visual impact of the proposed transmission line on the Resaca Battlefield with respect to future heritage tourism.

Thank you for considering our comments.

Sincerely,

David Howerin
Planning Director

RECEIVED
JUN 04 2007
GEORGIA
STATE CLEARINGHOUSE

COOSA VALLEY REGIONAL DEVELOPMENT CENTER

P.O. Box 1793 Rome, Georgia 30162-1793
RDC Fax (706) 295-6665 AAA Fax (706) 802-5508 WIA Fax (706) 802-5567
Phone (706) 295-6485 E-Mail: cvrdc@cvrdc.org www.cvrdc.org

Additional Comments on GA070521001 and GA0750516003 submitted to the Coosa Valley RDC by Gordon County Commissioner Phil Garner by e-mail on June 4, 2007.

The following comment has been approved by each commissioner on the Gordon County Board of Commissioners.

The Gordon County Board of Commissioners has serious concerns about the possible visual impact of the proposed TVA transmission line on The Resaca Battlefield area, including Ft. Wayne and New Echota. The battlefield and adjacent areas are an important strategic focus of future heritage tourism economic development for our county, the NW Georgia region and the State of Georgia. The State already has plans to develop a tourism information center at the battlefield. The presence of such transmission lines on the border of the site could have a negative impact on effective development of the area.

Thank you for your interest,

Alvin Long, Chairman
Judy Bailey, Vice-Chairman
Phil Garner
Richard Gordon
Rebecca Hood

David Howerin
Coosa Valley RDC
June 4, 2007

RECEIVED
JUN 04 2007
GEORGIA
STATE CLEARINGHOUSE

Date: 05/22/07

TO: Barbara Jackson, Administrator
Georgia State Clearinghouse
270 Washington St., S.W.
8th Floor
Atlanta, GA 30334-8500

FROM: Larry Vanden Bosch
Intergovernmental Coordination Clearinghouse Officer
Areawide Clearinghouse: North Georgia Regional Development Center

SUBJECT: RECEIPT OF NOTIFICATION OF INTENT TO APPLY FOR FEDERAL ASSISTANCE

Applicant: Tennessee Valley Authority

Project: Draft EA: Center Point-Moss Lake 230/115-kv Transmission Line and Moss Lake Substation (Gordon & Whitfield Counties, GA)

State Clearinghouse Control Number: GA 070516003

Areawide Clearinghouse Staff Contact: Larry Vanden Bosch
Jennifer Whorton

The Notification of Intent to Apply for Federal Assistance for the above project was received by the Areawide Clearinghouse on 05/22/07.

The Areawide review of this project has been initiated and every effort is being made to ensure prompt action. The proposal will be carefully reviewed relative to its consistency with Areawide goals, policies, plans, objectives, programs, and if applicable, with budgetary restraints. You may expect to be informed by the Areawide Clearinghouse of the results of the initial review by ASAP.

In future correspondence regarding this project, please include the State Clearinghouse Control Number shown above.

RECEIVED
MAY 29 2007
GEORGIA
STATE CLEARINGHOUSE

c: Applicant
0601640.002 EA

RC-1

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: MS. ANGELA ALEXANDER
GA DOT OFC OF TRANSPORTATION PLANNING

SUBJECT: Executive Order 12372 Review

APPLICANT: Tennessee Valley Authority

PROJECT: Draft EA: Center Point-Moss Lake 230/115-kv Transmission Line and Moss Lake Substation (Gordon & Whitfield Counties, GA)

STATE ID: GA070516003

FEDERAL ID:

DATE: 5-22-07

☐ This notice is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.

This notice is not consistent with:

☐ The goals, plans, policies, or fiscal resources with which this organization is concerned. (Line through inappropriate word or words and prepare a statement that explains the rationale for the inconsistency. (Additional pages may be used for outlining the inconsistencies. Be sure to put the GA State ID number on all pages).

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☑ This notice does not impact upon the activities of the organization.

NOTE: Should you decide to FAX this form (and any attached pages), it is <u>not</u> necessary to mail the originals to us.

RECEIVED
MAY 25 2007
GEORGIA
STATE CLEARINGHOUSE

Form SC-3
May 2007

GEORGIA STATE CLEARINGHOUSE MEMORANDUM
EXECUTIVE ORDER 12372 REVIEW PROCESS

TO: Barbara Jackson
Georgia State Clearinghouse
270 Washington Street, SW, Eighth Floor
Atlanta, Georgia 30334

FROM: MR. COLLIN BROWN
EPD/FLOOD PLAIN MANAGEMENT

SUBJECT: Executive Order 12372 Review

APPLICANT: Tennessee Valley Authority

PROJECT: Draft EA: Center Point-Moss Lake 230/115-kv Transmission Line and Moss Lake Substation (Gordon & Whitfield Counties, GA)

STATE ID: GA070516003

FEDERAL ID:

DATE: 6-13-07

☒ This notice is considered to be consistent with those state or regional goals, policies, plans, fiscal resources, criteria for developments of regional impact, environmental impacts, federal executive orders, acts and/or rules and regulations with which this organization is concerned.
(see attached comments)

This notice is not consistent with:

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RECEIVED
JUN 13 2007
GEORGIA
STATE CLEARINGHOUSE

Form SC-3
May 2007

PROJECT: Draft EA: Center Point-Moss Lake 230/115-kv transmission Line and Moss Lake Substation (Gordon and Whitfield Counties, Georgia)

STATE IDENTIFICATION: GA070516003

Examination of the Flood Insurance Rate Map (FIRM) for unincorporated areas of Gordon County, Georgia (panel #50 B, effective July 2, 1991) and unincorporated areas of Whitfield County, Georgia (panels #190 C, 195 C, and 225 C, all effective February 16, 1990) with information provided by the applicant indicate that portions of the project referenced above encroach on federally designated Special Flood Hazard Areas (SFHAs).

The following comments are general floodplain concerns. Some comments may not apply to your particular development

With new or replacement transmission line systems, care should be taken to design these systems in such a way as to eliminate infiltration of flood waters into the system.

In areas where lines are to be sited along creeks and/or rivers and within floodplain areas, design considerations should include a minimization of impacts in these areas. Where lines are buried in the floodplain, the land should be restored to its natural contours with minimum grading to reserve storage capacity. At locations where stream crossings are proposed, the lines should be designed to withstand the uplift and velocity forces associated with the 100-year flood event and to avoid obstruction of flow.

The applicant should be aware that if a proposed building site is located within any SFHA, all new construction and substantial improvement of any commercial, industrial, or non-residential structure must (1) be elevated above the 100-year flood elevation for the proposed site in accordance with the local flood ordinance (contact local officials regarding regulations governing elevation and construction design requirements) or flood-proofed provided that all areas of the structure below base flood elevation are designed to be water tight, with walls substantially impermeable to the passage of water as certified by a registered professional engineer or architect, (2) be adequately anchored to prevent flotation, collapse, or lateral movement of the structure resulting from hydrodynamic and hydrostatic loads, including the effects of buoyancy, (3) be constructed with electrical, heating, ventilation, plumbing, and air conditioning equipment and other service facilities designed and/or located so as to prevent water from entering or accumulating within the components during conditions of flooding.

Pursuant to Executive Order 11988, (Floodplain Management), direct or indirect federal support of floodplain development should be avoided unless there are no practicable alternatives. If there are no practicable alternatives and development in the floodplain is to be undertaken, the federal agency should document the reasons supporting this finding through the notification procedures outlined in the Executive Order.

RECEIVED
JUN 13 2007
GEORGIA
STATE CLEARINGHOUSE

Georgia Department of Natural Resources

Noel Holcomb, Commissioner

Historic Preservation Division

W. Ray Luce, Division Director and Deputy State Historic Preservation Officer
34 Peachtree Street, NW, Suite 1600, Atlanta, Georgia 30303-2316
Telephone (404) 656-2840 Fax (404) 657-1040 http://www.gashpo.org

June 20, 2007

Thomas O. Maher, Ph.D.
Manager,
Cultural Resources
Tennessee Valley Authority
400 West Summit Hill Drive
Knoxville, Tennessee 37902-1499

RE: Point-Moss Lake Transmission Lines and Substation, Near Dalton and Calhoun Gordon and Whitfield Counties, Georgia
HP-051112-004

Dear Dr. Maher:

The Historic Preservation Division (HPD) has reviewed the information submitted concerning the above referenced project. Our comments are offered to assist the Tennessee Valley Authority (TVA) and its applicants in complying with provisions of Section 106 of the National Historic Preservation Act of 1966, as amended (NHPA).

Thank you for sending the final report, *Cultural Resource Survey for the Proposed Center Point-Moss Lake Transmission Line, Gordon and Whitfield Counties, Georgia*, dated April 2007, prepared by TRC. Based on the information contained in that report, we concur that the subject project will have no adverse effect on any archaeological or historic resources considered eligible for inclusion in the National Register of Historic Places (NRHP). Please see our letter dated June 15, 2006 concerning the properties considered eligible. For your information, one copy of this report will be kept for our files, and the other will be sent to the Georgia Archaeological Site Files at the University of Georgia-Athens for permanent retention.

This letter evidences TVA's compliance with Section 106 of the NHPA. Therefore, no further steps are required regarding this undertaking. It is important to remember that any future changes to this project as it is currently proposed may require additional steps for Section 106 compliance. HPD encourages federal agencies and project applicants to discuss such changes with our office to ensure that potential effects to historic resources are adequately considered in project planning.

Please refer to project number **HP-051112-004** in any future correspondence regarding this undertaking. If we may be of further assistance, please do not hesitate to contact Elizabeth Shirk, Environmental Review Coordinator, at (404) 651-6624, or Michelle Volkema, Environmental Review Specialist, at (404) 651-6546.

Sincerely,

Karen Anderson-Cordova
Unit Manager, Planning & Local Assistance

KAC:mav

cc: Dan Latham, Jr., Coosa Valley RDC
Kevin McAuliff, North Georgia RDC

United States Department of the Interior

NATIONAL PARK SERVICE
Rivers, Trails, and Conservation Assistance
Southern Appalachian Field Office
175 Hamm Road, Suite C
Chattanooga, Tennessee 37405

IN REPLY REFER TO:

Electronic transmittal:

June 20, 2007

Anita E. Masters
Tennessee Valley Authority

Re: Center Point-Moss Lake Transmission Line

Dear Ms. Masters:

Thank you for the opportunity to provide comment regarding the above referenced project and potential impacts to rivers listed on the Nationwide Rivers Inventory (NRI). As you may know, the NRI is a listing of more than 3,400 free-flowing river segments in the United States that are believed to possess one or more "outstandingly remarkable" natural or cultural values judged to be of more than local or regional significance. Under a 1979 Presidential directive, and related Council on Environmental Quality procedures, all federal agencies must seek to avoid or mitigate actions that would adversely affect one or more NRI segments.

Based on information received to date, it is my understanding that the proposed project will occur within Gordon and Whitfield counties in the state of Georgia. Streams listed on the NRI within these counties include the Conasauga and Oostanula rivers. The Conasauga is listed from River Mile 0 to River Mile 64 for its outstanding scenic, recreation, geological, fisheries, wildlife, historical, and cultural resources. Similarly, the Oostanula River is listed from River Mile 4 to River Mile 51 for its outstanding scenic, recreational, historic, and cultural resources.

With the information I currently have on-hand, I am unable to ascertain whether either of these river segments will be affect by the proposed project. However, to the extent that the project does cross these NRI segments, TVA should seek measures to avoid or mitigation actions that would adversely affect these resources. Of particular note would be potential intrusions to the scenic, recreation, cultural, and historic resources since these values typically may not considered by other natural resource agencies (e.g., U.S. Fish and Wildlife Service, GDNR). All attempts should be made to either realign or otherwise disguise the transmission line, particularly from

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the perspective of a recreational river user (e.g., canoeist, bank fisherman, etc.). Further, if one has not been conducted already, a thorough study should be undertaken to determine probability the site-specific impacts to cultural and historic resources in the project area.

More information on the NRI can be found at www.nps.gov/rtca/nri. In the meantime, if you have any questions or need additional information, please do not hesitate to contact me. Thank you again for consulting with the National Park Service.

Sincerely,

_____/s/_____
Jeffrey R. Duncan, Ph.D.
Regional Rivers Program Manager

Cc: Helen Rucker
Chuck Nicholson

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Appendix II – Tennessee Valley Authority Right-of-Way Clearing Specifications

1. General - The clearing contractor shall review the environmental evaluation documents (categorical exclusion checklist, environmental assessment, or environmental impact statement) for the project or proposed activity, along with all clearing and construction appendices, conditions in applicable general and/or site-specific permits, the storm water pollution prevention plan, and any Tennessee Valley Authority (TVA) commitments to property owners. The contractor shall then plan and carry out operations using techniques consistent with good engineering and management practices as outlined in TVA's best management practice (BMP) manual (Muncy 1992, and revisions thereto). The contractor will protect areas that are to be left unaffected by access or clearing work at and adjacent to all work sites. In sensitive areas and their buffers, the contractor will retain as much native ground cover and other vegetation as possible.

   If the contractor fails to use BMPs or to follow environmental expectations discussed in the prebid or prework meeting or present in contract specifications, TVA will order corrective changes and additional work as deemed necessary in TVA's judgment to meet the intent of environmental laws and regulations or other guidelines. Major violations or continued minor violations will result in work suspension until correction of the situation is achieved or other remedial action is taken at the contractor's expense. Penalty clauses may be invoked as appropriate.

2. Regulations - The clearing contractor shall comply with all applicable federal, state, and local environmental and antipollution laws, regulations, and ordinances including without limitation all air, water, solid and hazardous waste, noise, and nuisance laws, regulations, and ordinances. The contractor shall secure or ensure that TVA has secured all necessary permits or authorizations to conduct work on the acres shown on the drawings and plan and profile for the contract. The contractor's designated project manager will actively seek to prevent, control, monitor, and safely abate all commonly recognized forms of workplace and environmental pollution. Permits or authorizations and any necessary certifications of trained or licensed employees shall be documented with copies submitted to TVA's right-of-way inspector or construction environmental engineer before work begins. The contractor will be responsible for meeting all conditions specified in permits. Permit conditions shall be reviewed in prework discussions.

3. Land and Landscape Preservation - The clearing contractor shall exercise care to preserve the condition of cleared soils by avoiding as much compacting and deep scarring as possible. As soon as possible after initial disturbance of the soil and in accordance with any permit(s) or other state or local environmental regulatory requirements, cover material shall be placed to prevent erosion and sedimentation of water bodies or conveyances to surface water or groundwater. In areas outside the clearing, use, and access areas, the natural vegetation shall be protected from damage. The contractor and his employees must not deviate from delineated access routes or use areas and must enter the site at designated areas that will be marked. Clearing operations shall be conducted to prevent any unnecessary destruction, scarring, or defacing of the remaining natural vegetation and adjacent surroundings in the vicinity of the work. In sensitive public or environmental areas, appropriate buffer zones shall be observed and the methods of clearing or reclearing modified to protect the buffer and sensitive area. Some areas may require planting native

plants or grasses to meet the criteria of regulatory agencies or commitments to special program interests.

4. Streamside Management Zones - The clearing contractor must leave as many rooted ground cover plants as possible in buffer zones along streams and other bodies of water or wet-weather conveyances thereto. In such streamside management zones (SMZ), tall-growing tree species (trees that would interfere with TVA's National Electric Safety Code clearances) shall be cut, and the stumps may be treated to prevent resprouting. Low-growing trees identified by TVA as marginal electrical clearance problems may be cut, and then stump treated with growth regulators to allow low, slow-growing canopy development and active root growth. Only approved herbicides shall be used, and herbicide application shall be conducted by certified applicators from TVA's Transmission, Operations, and Maintenance (TOM) organization after initial clearing and construction. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment, such as a feller-buncher. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Disturbed soils in SMZs must be stabilized by appropriate methods immediately after the right-of-way is cleared. Stabilization must occur within the time frame specified in applicable storm water permits or regulations. Stumps within SMZs may be cut close to the ground but must not be removed or uprooted. Trees, limbs, and debris shall be immediately removed from streams, ditches, and wet areas using methods that will minimize dragging or scarring the banks or stream bottom. No debris will be left in the water or watercourse. Equipment will cross streams, ditches, or wet areas only at locations designated by TVA after the application of appropriate erosion control BMPs consistent with permit conditions or regulatory requirements.

5. Wetlands - In forested wetlands, tall trees will be cut near the ground, leaving stumps and roots in place. The cambium may be treated with herbicides applied by certified applicators from the TOM organization to prevent regrowth. Understory trees that must be initially cut and removed may be allowed to grow back or may be treated with tree growth regulators selectively to slow growth and increase the reclearing cycle. The decision will be situationally made based on existing ground cover, wetland type, and tree species since tall tree removal may "release" understory species and allow them to grow quickly to "electrical clearance problem" heights. In many circumstances, herbicides labeled for water and wetland use may be used in reclearing.

6. Sensitive Area Preservation - If prehistoric or historic artifacts or features that might be of archaeological significance are discovered during clearing or reclearing operations, the activity shall immediately cease within a 100-foot radius, and a TVA right-of-way inspector or construction environmental engineer and the Cultural Resources Program manager shall be notified. The site shall be protected and left as found until a determination about the resources, their significance, and site treatment is made by TVA's Cultural Resources Program. Work may continue beyond the finding zone and the 100-foot radius beyond its perimeter.

7. Water Quality Control - The contractor's clearing and disposal activities shall be performed using BMPs that will prevent erosion and entrance of spillage, contaminants, debris, and other pollutants or objectionable materials into drainage ways, surface water, or groundwater. Special care shall be exercised in refueling equipment to prevent spills. Fueling areas shall be remote from any sinkhole, crevice, stream, or other water body.

Open burning debris will be kept away from streams and ditches and shall be incorporated into the soil.

The clearing contractor will erect and (when TVA or contract construction personnel are unable) maintain BMPs such as silt fences on steep slopes and adjacent to any stream, wetland, or other water body. BMPs will be inspected by the TVA field engineer or other designated TVA or contractor personnel routinely and during periods of high runoff, and any necessary repairs will be made as soon as practicable. BMP inspections will be conducted in accordance with permit requirements. Records of all inspections will be maintained on site, and copies of inspection forms will be forwarded to the TVA construction environmental engineer.

8. Turbidity and Blocking of Streams - If temporary clearing activities must interrupt natural drainage, appropriate drainage facilities and erosion/sediment controls shall be provided to avoid erosion and siltation of streams and other water bodies or water conveyances. Turbidity levels in receiving waters or at storm water discharge points shall be monitored, documented, and reported if required by the applicable permit. Erosion and sediment control measures such as silt fences, water bars, and sediment traps shall be installed as soon as practicable after initial access, site, or right-of-way disturbance in accordance with applicable permit or regulatory requirements.

   Mechanized equipment shall not be operated in flowing water except when approved and, then, only to construct necessary stream crossings under direct guidance of TVA. Construction of stream fords or other crossings will only be permitted at approved locations and to current TVA construction access road standards. Material shall not be deposited in watercourses or within stream bank areas where it could be washed away by high stream flows. Any clearing debris that enters streams or other water bodies shall be removed as soon as possible. Appropriate U.S. Army Corps of Engineers and state permits shall be obtained for stream crossings.

9. Air Quality Control - The clearing or reclearing contractor shall take appropriate actions to limit the amount of air emissions created by clearing and disposal operations to well within the limits of clearing or burning permits and/or forestry or local fire department requirements. All operations must be conducted in a manner that prevents nuisance conditions or damage to adjacent land crops, dwellings, highways, or people.

10. Dust and Mud Control - Clearing activities shall be conducted in a manner that minimizes the creation of fugitive dust. This may require limitations as to type of equipment, allowable speeds, and routes utilized. Control measures such as water, gravel, etc., or similar measures may be used subject to TVA approval. On new construction sites and easements, the last 100 feet before an access road approaches a county road or highway shall be graveled to prevent transfer of mud onto the public road.

11. Burning - The contractor shall obtain applicable permits and approvals to conduct controlled burning. The contractor will comply with all provisions of the permit, notification, or authorization including burning site locations, controlled draft, burning hours, and such other conditions as stipulated. If weather conditions such as wind speed or wind direction change rapidly, the contractor's burning operation may be temporarily stopped by TVA's field engineer. The debris to be burned shall be kept as clean and dry as possible and stacked and burned in a manner that produces the minimum amount of smoke. Residue

from burning will be disposed of according to permit stipulations. No fuel starters or enhancements other than kerosene will be allowed.

12. Smoke and Odors - The contractor will properly store and handle combustible and volatile materials that could create objectionable smoke, odor, or fumes. The contractor shall not burn oil or refuse that includes trash, rags, tires, plastics, or other manufactured debris.

13. Vehicle Exhaust Emissions - The contractor shall maintain and operate equipment in a manner that limits vehicle exhaust emissions. Equipment and vehicles will be kept within the manufacturers' recommended limits and tolerances. Excessive exhaust gases will be eliminated, and inefficient operating procedures will be revised or halted until corrective repairs or adjustments are made.

14. Vehicle Servicing - Routine maintenance of personal vehicles will not be performed on the right-of-way. However, if emergency or "have to" situations arise, minimal/temporary maintenance to personal vehicles will occur in order to mobilize the vehicle to an off-site maintenance shop. Heavy equipment will be serviced on the right-of-way, except in designated sensitive areas. The clearing or reclearing contractor will properly maintain these vehicles with approved spill protection controls and countermeasures. If emergency maintenance in a sensitive or questionable area arises, the area environmental coordinator or construction environmental engineer will be consulted. All wastes and used oils will be properly recovered, handled, and disposed/recycled. Equipment shall not be temporarily stored in stream floodplains, whether overnight or on weekends or holidays.

15. Noise Control - The contractor shall take steps to avoid the creation of excessive sound levels for employees, the public, or the site and adjacent property owners. Concentration of individual noisy pieces as well as the hours and locations of operation should be considered.

16. Noise Suppression - All internal combustion engines shall be properly equipped with mufflers. The equipment and mufflers shall be maintained at peak operating efficiency.

17. Sanitation - A designated representative of TVA or the clearing contractor shall contact a sanitary contractor who will provide sanitary chemical toilets convenient to all principal points of operation for every working party. The facilities shall comply with applicable federal, state, or local health laws and regulations. They shall not be located closer than 100 feet to any stream or tributary or to any wetland. The facilities shall be required to have proper servicing and maintenance, and the waste disposal contractor shall verify in writing that the waste disposal will be in state-approved facilities. Employees shall be notified of sanitation regulations and shall be required to use the toilet facilities.

18. Refuse Disposal - The clearing or reclearing contractor shall be responsible for daily cleanup and proper labeling, storage, and disposal of all refuse and debris on the site produced by his operations and employees. Facilities that meet applicable regulations and guidelines for refuse collection will be required. Only approved transport, storage, and disposal areas shall be used.

19. Brush and Timber Disposal (Reclearing) - The reclearing contractor shall place felled tree boles in neat stacks at the edge of the right-of-way, with crossing breaks at least every 100 feet. Property owner requests shall be reviewed with the project manager or right-of-way specialist before accepting them. Lop and drop activities must be specified in the contract

and on plan and profile drawings with verification with the right-of-way specialist before conducting such work. When tree trimming and chipping is necessary, disposal of the chips on the easement or other locations on the property must be with the consent of the property owner and the approval of the right-of-way specialist. No trees, branches, or chips shall remain in a surface water body or be placed at a location where washing into a surface water or groundwater source might occur.

20. Brush and Timber Disposal (Initial Clearing) - For initial clearing, trees are commonly part of the contractor's contract to remove as they wish. Trees may be removed from the site for lumber or pulpwood or they may be chipped or stacked and burned. All such activities must be coordinated with the TVA field engineer, and the open burning permits, notifications, and regulatory requirements must be met. Trees may be cut and left in place only in areas specified by TVA and approved by appropriate regulatory agencies. These areas may include sensitive wetlands or SMZs where tree removal would cause excessive ground disturbance or in very rugged terrain where windrowed trees are used as sediment barriers along the edge of the right-of-way.

21. Restoration of Site - All disturbed areas, with the exception of farmland under cultivation and any other areas as may be designated by TVA's specifications, shall be stabilized in the following manner unless the property owner and TVA's engineer specify a different method:

    A. The subsoil shall be loosened to a minimum depth of 6 inches if possible and worked to remove unnatural ridges and depressions.

    B. If needed, appropriate soil amendments will be added.

    C. All disturbed areas will initially be seeded with a temporary ground cover such as winter wheat, rye, or millet, depending on the season. Perennials may also be planted during initial seeding if proper growing conditions exist. Final restoration and final seeding will be performed as line construction is completed. Final seeding will consist of permanent perennial grasses such as those outlined in TVA's *A Guide for Environmental Protection and Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities.* Exceptions would include those areas designated as native grass planting areas. Initial and final restoration will be performed by the clearing contractor.

    D. TVA holds the option, depending upon the time of year and weather condition, to delay or withdraw the requirement of seeding until more favorable planting conditions are certain. In the meantime, other stabilization techniques must be applied.

Revision April 2007

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Appendix III – Tennessee Valley Authority Environmental Quality Protection Specifications for Transmission Line Construction

1. General – Tennessee Valley Authority (TVA) and/or the assigned contractor shall plan, coordinate, and conduct operations in a manner that protects the quality of the environment and complies with TVA's environmental expectations discussed in the preconstruction meeting. This specification contains provisions that shall be considered in all TVA and contract construction operations. If the contractor fails to operate within the intent of these requirements, TVA will direct changes to operating procedures. Continued violation will result in a work suspension until correction or remedial action is taken by the contractor. Penalties and contract termination will be used as appropriate. The costs of complying with the Environmental Quality Protection Specifications are incidental to the contract work, and no additional compensation will be allowed. At all structure and conductor pulling sites, protective measures to prevent erosion will be taken immediately upon the end of each step in a construction sequence, and those protective measures will be inspected and maintained throughout the construction and right-of-way rehabilitation period.

2. Regulations - TVA and/or the assigned contractor shall comply with all applicable federal, state, and local environmental and antipollution laws, regulations, and ordinances related to environmental protection and prevention, control, and abatement of all forms of pollution.

3. Use Areas - TVA and/or the assigned contractor's use areas include but are not limited to site office, shop, maintenance, parking, storage, staging, assembly areas, utility services, and access roads to the use areas. The construction contractor shall submit plans and drawings for their location and development to the TVA engineer and project manager for approval. Secondary containment will be provided for fuel and petroleum product storage pursuant to 29CFR1910.106(D)(6)(iii)(OSHA).

4. Equipment - All major equipment and proposed methods of operation shall be subject to the approval of TVA. The use or operation of heavy equipment in areas outside the right-of-way, access routes, or structure, pole, or tower sites will not be permitted without permission of the TVA inspector or field engineer. Heavy equipment use on steep slopes (greater than 20 percent) and in wet areas will be held to the minimum necessary to construct the transmission line. Steps will be taken to limit ground disturbance caused by heavy equipment usage, and erosion and sediment controls will be instituted on disturbed areas in accordance with state requirements.

   No subsurface ground-disturbing equipment or stump-removal equipment will be used by construction forces except on access roads or at the actual structure, pole, or tower sites, where only footing locations and controlled runoff diversions shall be created that disturb the soil. All other areas of ground cover or in-place stumps and roots shall remain in place. (Note: Tracked vehicles disturb surface layer of the ground due to size and function.) Some disking of the right-of-way may occur for proper seedbed preparation.

   Unless ponding previously occurred (i.e., existing low-lying areas), water should not be allowed to pond on the structure sites except around foundation holes; the water must

be directed away from the site in as dispersed a manner as possible. At tower or structure sites, some means of upslope interruption of potential overland flow and diversion around the footings should be provided as the first step in construction-site preparation. If leveling is necessary, it must be implemented by means that provide for continuous gentle, controlled, overland flow or percolation. A good grass cover, straw, gravel, or other protection of the surface must be maintained. Steps taken to prevent increases in the moisture content of the in-situ soils will be beneficial both during construction and over the service life of any structure.

5. Sanitation - A designated TVA or contractor representative shall contact a sanitary contractor who will provide sanitary chemical toilets convenient to all principal points of operation for every working party. The facilities shall comply with applicable federal, state, or local health laws and regulations. They shall not be located closer than 100 feet to any stream or tributary or to any wetland. The facilities shall be required to have proper servicing and maintenance, and the waste disposal contractor shall verify in writing that the waste disposal will be in state-approved facilities. Employees shall be notified of sanitation regulations and shall be required to use the toilet facilities.

6. Refuse Disposal - Designated TVA and/or contractor personnel shall be responsible for daily inspection, cleanup, and proper labeling, storage, and disposal of all refuse and debris produced by his operations and by his employees. Suitable refuse collecting facilities will be required. Only state-approved disposal areas shall be used. Disposal containers such as dumpsters or roll-off containers shall be obtained from a proper waste disposal contractor. Solid, special, construction/demolition, and hazardous wastes as well as scrap are part of the potential refuse generated and must be properly managed with emphasis on reuse, recycle, or possible give away, as appropriate, before they are handled as waste. Contractors must meet similar provisions on any project contracted by TVA.

7. Landscape Preservation - TVA and its contractors shall exercise care to preserve the natural landscape in the entire construction area as well as use areas, in or outside the right-of-way, and on or adjacent to access roads. Construction operations shall be conducted to prevent any unnecessary destruction, scarring, or defacing of the natural vegetation and surroundings in the vicinity of the work.

8. Sensitive Areas Preservation - Certain areas on site and along the right-of-way may be designated by the specifications or the TVA engineer as environmentally sensitive. These areas include but are not limited to areas classified as erodible, geologically sensitive, scenic, historical and archaeological, fish and wildlife refuges, water supply watersheds, and public recreational areas such as parks and monuments. Contractors and TVA construction crews shall take all necessary actions to avoid adverse impacts to these sensitive areas and their adjacent buffer zones. These actions may include suspension of work or change of operations during periods of rain or heavy public use; hours may be restricted or concentrations of noisy equipment may have to be dispersed. If prehistoric or historic artifacts or features are encountered during clearing or construction operations, the operations shall immediately cease for at least 100 feet in each direction, and TVA's right-of-way inspector or construction superintendent and Cultural Resources Program shall be notified. The site shall be left as found until a significance determination is made. Work may continue elsewhere beyond the 100-foot perimeter.

9. Water Quality Control - TVA and contractor construction activities shall be performed by methods that will prevent entrance or accidental spillage of solid matter, contaminants, debris, and other objectionable pollutants and wastes into flowing caves, sinkholes, streams, dry watercourses, lakes, ponds, and underground water sources.

   The clearing contractor will erect and (when TVA or contract construction personnel are unable) maintain best management practices (BMPs) such as silt fences on steep slopes and adjacent to any stream, wetland, or other water body. Additional BMPs may be required for areas of disturbance created by construction activities. BMPs will be inspected by the TVA field engineer or other designated TVA or contractor personnel routinely and during periods of high runoff, and any necessary repairs will be made as soon as practicable. BMP inspections will be conducted in accordance with permit requirements. Records of all inspections will be maintained on site, and copies of inspection forms will be forwarded to the TVA construction environmental engineer.

   Acceptable measures for disposal of waste oil from vehicles and equipment shall be followed. No waste oil shall be disposed of within the right-of-way, on a construction site, or on access roads.

10. Turbidity and Blocking of Streams - Construction activities in or near SMZs or other bodies of water shall be controlled to prevent the water turbidity from exceeding state or local water quality standards for that stream. All conditions of a general storm water permit, aquatic resource alteration permit, or a site-specific permit shall be met including monitoring of turbidity in receiving streams and/or storm water discharges and implementation of appropriate erosion and sediment control measures.

    Appropriate drainage facilities for temporary construction activities interrupting natural site drainage shall be provided to avoid erosion. Watercourses shall not be blocked or diverted unless required by the specifications or the TVA engineer. Diversions shall be made in accordance with TVA's *A Guide for Environmental Protection and Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities.*

    Mechanized equipment shall not be operated in flowing water except when approved and, then, only to construct crossings or to perform required construction under direct guidance of TVA. Construction of stream fords or other crossings will only be permitted at approved locations and to current TVA construction access road standards. Material shall not be deposited in watercourses or within stream bank areas where it could be washed away by high stream flows. Appropriate U.S. Army Corps of Engineers and state permits shall be obtained.

    Wastewater from construction or dewatering operations shall be controlled to prevent excessive erosion or turbidity in a stream, wetland, lake, or pond. Any work or placing of equipment within a flowing or dry watercourse requires the prior approval of TVA.

11. Clearing - No construction activities may clear additional site or right-of-way vegetation or disturb remaining retained vegetation, stumps, or regrowth at locations other than the structure sites and conductor setup areas. TVA and the construction contractor(s) must provide appropriate erosion or sediment controls for areas they have disturbed that have previously been restabilized after clearing operations. Control measures shall be

implemented as soon as practicable after disturbance in accordance with applicable federal, state, and/or local storm water regulations.

12. Restoration of Site - All construction disturbed areas, with the exception of farmland under cultivation and any other areas as may be designated by TVA's specifications, shall be stabilized in the following manner unless the property owner and TVA's engineer specify a different method:

    A. The subsoil shall be loosened to a minimum depth of 6 inches if possible and worked to remove unnatural ridges and depressions.

    B. If needed, appropriate soil amendments will be added.

    C. All disturbed areas will initially be seeded with a temporary ground cover such as winter wheat, rye, or millet, depending on the season. Perennials may also be planted during initial seeding if proper growing conditions exist. Final restoration and final seeding will be performed as line construction is completed. Final seeding will consist of permanent perennial grasses such as those outlined in TVA's *A Guide for Environmental Protection and Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities.* Exceptions would include those areas designated as native grass planting areas. Initial and final restoration will be performed by the clearing contractor.

    D. TVA holds the option, depending upon the time of year and weather condition, to delay or withdraw the requirement of seeding until more favorable planting conditions are certain. In the meantime, other stabilization techniques must be applied.

13. Air Quality Control - Construction crews shall take appropriate actions to minimize the amount of air pollution created by their construction operations. All operations must be conducted in a manner that avoids creating a nuisance and prevents damage to lands, crops, dwellings, or persons.

14. Burning - Before conducting any open burning operations, the contractor shall obtain permits or provide notifications as required to state forestry offices and/or local fire departments. Burning operations must comply with the requirements of state and local air pollution control and fire authorities and will only be allowed in approved locations and during appropriate hours and weather conditions. If weather conditions such as wind direction or speed change rapidly, the contractor's burning operations may be temporarily stopped by the TVA field engineer. The debris for burning shall be piled and shall be kept as clean and as dry as possible, then burned in such a manner as to reduce smoke. No materials other than dry wood shall be open burned. The ash and debris shall be buried away from streams or other water sources and shall be in areas coordinated with the property owner.

15. Dust and Mud Control - Construction activities shall be conducted to minimize the creation of dust. This may require limitations as to types of equipment, allowable speeds, and routes utilized. Water, straw, wood chips, dust palliative, gravel, combinations of these, or similar control measures may be used subject to TVA's approval. On new construction sites and easements, the last 100 feet before an access

road approaches a county road or highway shall be graveled to prevent transfer of mud onto the public road.

16. Vehicle Exhaust Emissions - TVA and/or the contractors shall maintain and operate equipment to limit vehicle exhaust emissions. Equipment and vehicles that show excessive emissions of exhaust gasses and particulates due to poor engine adjustments or other inefficient operating conditions shall not be operated until corrective repairs or adjustments are made.

17. Vehicle Servicing - Routine maintenance of personal vehicles will not be performed on the right-of-way. However, if emergency or “have to” situations arise, minimal/temporary maintenance to personal vehicles will occur in order to mobilize the vehicle to an off-site maintenance shop. Heavy equipment will be serviced on the right-of-way except in designated sensitive areas. The Heavy Equipment Department within TVA or the construction contractor will properly maintain these vehicles with approved spill prevention controls and countermeasures. If emergency maintenance in a sensitive or questionable area arises, the area environmental coordinator or construction environmental engineer will be consulted. All wastes and used oils will be properly recovered, handled, and disposed/recycled. Equipment shall not be temporarily stored in stream floodplains, whether overnight or on weekends or holidays.

18. Smoke and Odors - TVA and/or the contractors shall properly store and handle combustible material that could create objectionable smoke, odors, or fumes. The contractor shall not burn refuse such as trash, rags, tires, plastics, or other debris.

19. Noise Control - TVA and/or the contractor shall take measures to avoid the creation of noise levels that are considered nuisances, safety, or health hazards. Critical areas including but not limited to residential areas, parks, public use areas, and some ranching operations will require special considerations. TVA's criteria for determining corrective measures shall be determined by comparing the noise level of the construction operation to the background noise levels. In addition, especially noisy equipment such as helicopters, pile drivers, air hammers, chippers, chain saws, or areas for machine shops, staging, assembly, or blasting may require corrective actions when required by TVA.

20. Noise Suppression - All internal combustion engines shall be properly equipped with mufflers as required by the Department of Labor's *Safety and Health Regulations for Construction.* TVA may require spark arresters in addition to mufflers on some engines. Air compressors and other noisy equipment may require sound-reducing enclosures in some circumstances.

21. Damages - The movement of construction crews and equipment shall be conducted in a manner that causes as little intrusion and damage as possible to crops, orchards, woods, wetlands, and other property features and vegetation. The contractor will be responsible for erosion damage caused by his actions and especially for creating conditions that would threaten the stability of the right-of-way or site soil, the structures, or access to either. When property owners prefer the correction of ground cover condition or soil and subsoil problems themselves, the section of the contract dealing with damages will apply.

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Appendix IV – Tennessee Valley Authority Transmission Construction Guidelines Near Streams

Even the most carefully designed transmission line project eventually will affect one or more creeks, rivers, or other type of water body. These streams and other water areas are protected by state and federal law, generally support some amount of fishing and recreation, and, occasionally, are homes for important and/or endangered species. These habitats occur in the stream and on strips of land along both sides (the streamside management zone [SMZ]) where disturbance of the water, land, or vegetation could have an adverse effect on the water or stream life. The following guidelines have been prepared to help Tennessee Valley Authority (TVA) Transmission Construction staff and their contractors avoid impacts to streams and stream life as they work in and near SMZs. These guidelines expand on information presented in *A Guide for Environmental Protection and Best Management Practices for TVA Construction and Maintenance Activities.*

Three Levels of Protection

During the preconstruction review of a proposed transmission line, TVA Environmental Stewardship and Policy staff will have studied each possible stream impact site and will have identified it as falling into one of three categories: (A) standard stream protection, (B) protection of important permanent streams, or (C) protection of unique habitats. These category designations are based on the variety of species and habitats that exist in the stream as well as state and federal requirements to avoid harming certain species. The category designation for each site will be marked on the plan and profile sheets. Construction crews are required to protect streams and other identified water habitats using the following pertinent set(s) of guidelines:

(A) Standard Stream Protection

This is the standard (basic) level of protection for streams and the habitats around them. The purpose of the following guidelines is to minimize the amount and length of disturbance to the water bodies without causing adverse impacts on the construction work.

Guidelines:

1. All construction work around streams will be done using pertinent best management practices (BMPs) such as those described in *A Guide for Environmental Protection and Best Management Practices for TVA Construction and Maintenance Activities,* especially Chapter 6, “Standards and Specifications.”

2. All equipment crossings of streams must comply with appropriate state permitting requirements. Crossings of all drainage channels, intermittent streams, and permanent streams must be done in ways that avoid erosion problems and long-term changes in water flow. Crossings of any permanent streams must allow for natural movement of fish and other aquatic life.

3. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to

minimize soil disturbance and impacts to the SMZ and surrounding area. Stumps can be cut close to ground level but must not be removed or uprooted.

4. Other vegetation near streams must be disturbed as little as possible during construction. Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will not be allowed in SMZs; however, a minimal amount of soil disturbance may occur as a result of clearing operations. Shorelines that have to be disturbed must be stabilized as soon as feasible.

(B) Protection of Important Permanent Streams

This category will be used when there is one or more specific reason(s) why a permanent (always-flowing) stream requires protection beyond that provided by standard BMPs. Reasons for requiring this additional protection include the presence of important sports fish (trout, for example) and habitats for federal endangered species. The purpose of the following guidelines is to minimize the disturbance of the banks and water in the flowing stream(s) where this level of protection is required.

Guidelines:

1. Except as modified by guidelines 2-4 below, all construction work around streams will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for TVA Construction and Maintenance Activities,* especially Chapter 6, “Standards and Specifications.”

2. All equipment crossings of streams must comply with appropriate state (and, at times, federal) permitting requirements. Crossings of drainage channels and intermittent streams must be done in ways that avoid erosion problems and long-term changes in water flow. Proposed crossings of permanent streams must be discussed in advance with Environmental Stewardship and Policy staff and may require an on-site planning session before any work begins. The purpose of these discussions will be to minimize the number of crossings and their impact on the important resources in the streams.

3. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Cutting of trees near permanent streams must be limited to those required to meet National Electric Safety Code and danger tree requirements. Stumps can be cut close to ground level but must not be removed or uprooted.

4. Other vegetation near streams must be disturbed as little as possible during construction. Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will not be allowed in SMZs; however, a minimal amount of soil disturbance may occur as a result of clearing operations. Shorelines that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible.

(C) Protection of Unique Habitats

This category will be used when, for one or more specific reasons, a temporary or permanent aquatic habitat requires special protection. This relatively uncommon level of protection will be appropriate and required when a unique habitat (for example, a particular spring run) or protected species (for example, one that breeds in a wet-weather ditch) is known to occur on or adjacent to the construction corridor. The purpose of the following guidelines is to avoid or minimize any disturbance of the unique aquatic habitat.

Guidelines:

1. Except as modified by Guidelines 2-4 below, all construction work around the unique habitat will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for TVA Construction and Maintenance Activities,* especially Chapter 6, "Standards and Specifications."

2. All construction activity in and within 30 meters (100 feet) of the unique habitat must be approved in advance by Environmental Stewardship and Policy staff, preferably as a result of an on-site planning session. The purpose of this review and approval will be to minimize impacts on the unique habitat. All crossings of streams also must comply with appropriate state (and, at times, federal) permitting requirements.

3. Cutting of trees within 30 meters (100 feet) of the unique habitat must be discussed in advance with Environmental Stewardship and Policy staff, preferably during the on-site planning session. Cutting of trees near the unique habitat must be kept to an absolute minimum. Stumps must not be removed, uprooted, or cut shorter than 0.30 meter (1 foot) above the ground line.

4. Other vegetation near the unique habitat must be disturbed as little as possible during construction. The soil must not be disturbed by plowing, disking, blading, or grading. Areas that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible, in some cases with specific kinds of native plants. These and other vegetative requirements will be coordinated with Environmental Stewardship and Policy staff.

Additional Help

If you have questions about the purpose or application of these guidelines, please contact your supervisor or the environmental coordinator in the local Transmission Service Center.

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Comparison of Guidelines Under the Three Stream and Water Body Protection Categories (page 1)

Guidelines	A: Standard	B: Important Permanent Streams	C: Unique Water Habitats
1. Reference	• All TVA construction work around streams will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for TVA Construction and Maintenance Activities,* especially Chapter 6, BMP "Standards and Specifications."	Except as modified by guidelines 2-4 below, all construction work around streams will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for TVA Construction and Maintenance Activities,* especially Chapter 6, BMP "Standards and Specifications."	• Except as modified by guidelines 2-4 below, all construction work around the unique habitat will be done using pertinent BMPs such as those described in *A Guide for Environmental Protection and Best Management Practices for TVA Construction and Maintenance Activities,* especially Chapter 6, BMP "Standards and Specifications."
2. Equipment Crossings	• All crossings of streams must comply with appropriate state and federal permitting requirements. • Crossings of all drainage channels, intermittent streams, and permanent streams must be done in ways that avoid erosion problems and long-term changes in water flow. • Crossings of any permanent streams must allow for natural movement of fish and other aquatic life.	• All crossings of streams must comply with appropriate state and federal permitting requirements. • Crossings of drainage channels and intermittent streams must be done in ways that avoid erosion problems and long-term changes in water flow. • Proposed crossings of permanent streams must be discussed in advance with Environmental Stewardship and Policy staff and may require an on-site planning session before any work begins. The purpose of these discussions will be to minimize the number of crossings and their impact on the important resources in the streams.	• All crossings of streams also must comply with appropriate state and federal permitting requirements. • All construction activity in and within 30 meters (100 feet) of the unique habitat must be approved in advance by Environmental Stewardship and Policy staff, preferably as a result of an on-site planning session. The purpose of this review and approval will be to minimize impacts on the unique habitat.

Comparison of Guidelines Under the Three Stream and Water Body Protection Categories (page 2)

Guidelines	A: Standard	B: Important Permanent Streams	C: Unique Water Habitats
3. Cutting Trees	• Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. • Stumps can be cut close to ground level but must not be removed or uprooted.	• Cutting of trees with SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment (e.g., a feller-buncher) that would result in minimal soil disturbance and damage to low-lying vegetation. The method will be selected based on site-specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. • Cutting of trees near permanent streams must be limited to those meeting National Electric Safety Code and danger tree requirements. • Stumps can be cut close to ground level but must not be removed or uprooted.	• Cutting of trees within 30 meters (100 feet) of the unique habitat must be discussed in advance with Environmental Stewardship and Policy staff, preferably during the on-site planning session. Cutting of trees near the unique habitat must be kept to an absolute minimum. • Stumps must not be removed, uprooted, or cut shorter than 1 foot above the ground line.
4. Other Vegetation	• Other vegetation near streams must be disturbed as little as possible during construction. • Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will not be allowed in SMZs; however, a minimal amount of soil disturbance may occur as a result of clearing operations. • Shorelines that have to be disturbed must be stabilized as soon as feasible.	• Other vegetation near streams must be disturbed as little as possible during construction. • Soil displacement by the actions of plowing, disking, blading, or other tillage or grading equipment will not be allowed in SMZs; however, a minimal amount of soil disturbance may occur as a result of clearing operations. • Shorelines that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible.	• Other vegetation near the unique habitat must be disturbed as little as possible during construction. • The soil must not be disturbed by plowing, disking, blading, or grading. • Areas that have to be disturbed must be stabilized as soon as possible and revegetated as soon as feasible, in some cases with specific kinds of native plants. These and other vegetative requirements will be coordinated with Environmental Stewardship and Policy staff.

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Appendix V – Site Clearing and Grading Specifications

1. General - The project manager with the clearing and/or grading contractor(s) shall review the environmental evaluation documents for the project or proposed activity (checklist, EDR, EA or EIS) along with all clearing and construction appendices, conditions in applicable general and/or site specific permits, the storm water pollution prevention plan, open burning or demolition notification requirements and any TVA commitments to property owners. The contractor shall then plan and carry out operations using techniques consistent with good engineering and storm water management practices as outlined in TVA's BMP manual (Revised 2000 version). The contractor will protect areas that are to be left unaffected by access or clearing work at and adjacent to all work sites. In sensitive areas and their buffers, the contractor will retain as much native ground cover and other vegetation as possible. The BMPs shall be installed before general site clearing, before grading the site, and progressively stabilization BMPs shall be applied from the perimeter toward the interior work areas as grading is completed. Any stabilized area that must be disturbed in subsequent steps shall be protected by temporary BMPs again until work is completed and the area is re-stabilized.

   If the contractor fails to use best management practices or to follow environmental expectations discussed in the pre-bid, pre-work meeting or present in contract specifications, TVA will order corrective changes and additional work, as deemed necessary in TVA's judgment, to meet the intent of environmental laws and regulations or other guidelines. Major violations or continued minor violations will result in work suspension until correction of the situation is achieved or other remedial action is taken at the contractor's expense. Penalty clauses may be invoked as appropriate.

2. Regulations - The clearing contractor shall comply with all applicable federal, state, and local environmental and anti-pollution laws, regulations, and ordinances, including, without limitation, all air, water, solid and hazardous waste, noise, and nuisance laws, regulations, and ordinances. He or she shall secure, or ensure that TVA has **secured, all necessary permits and authorizations and made all appropriate notifications** to conduct work on the acres shown on the drawings and plan and profile for the contract. The contractor's designated project manager will actively seek to prevent, control, monitor and safely abate all commonly recognized forms of workplace and environmental pollution. Permits or authorizations and **any necessary certifications of trained employees knowledgeable of environmental requirements shall be documented** with copies submitted to TVA's project manager or environmental specialist before work begins. The **contractor and subcontractors will be responsible for meeting all** conditions **specified in permits.** Permit conditions shall be reviewed in pre-work discussions.

3. Land and Landscape Preservation - The contractor shall exercise care to preserve the condition of cleared soils by avoiding as much compacting and deep scarring as possible in areas not to be developed for buildings, structures, or foundations. As soon as possible after initial disturbance of the soil and in accordance with any permit(s) or other state or local environmental regulatory requirements, cover material shall be placed to prevent erosion and sedimentation of water bodies or conveyances to surface or ground water. The placement of erosion/sediment controls shall begin at the perimeter and work progressively to the interior of the site. Repeated work in an area will require establishment of a ground cover immediately after each disturbance is completed. In areas outside the clearing, borrow, fill, or use, and access areas, the natural vegetation shall be protected from damage. The contractor and his or her employees and subcontractors must not deviate from delineated access routes or use areas, and must enter the

site(s) at designated areas that will be marked. Clearing operations shall be conducted to prevent any unnecessary destruction, scarring, or defacing of the remaining natural vegetation and adjacent surroundings in the vicinity of the work. In sensitive public or environmental areas, appropriate buffer zones shall be observed and the methods of clearing or re-clearing, grading, borrow or fill modified to protect the buffer and sensitive area. Some areas may require planting native low growing plants or grasses to meet the criteria of regulatory agencies, Executive Orders or commitments to special program interests.

4. Stream side Management Zones - The clearing and/or grading contractor(s) must leave as many rooted ground cover plants as possible in buffer zones along streams and other bodies of water or wet weather conveyances thereto. . In such stream side management zones (SMZ), tall growing tree species (trees that would interfere with TVA's National Electric Safety Code clearances) shall be cut, and the stumps may be treated to prevent re-sprouting. Low growing trees identified by TVA as marginal electrical clearance problems may be cut, then stump treated with growth regulators to allow low, slow growing canopy development and active root growth. Only approved herbicides shall be used, and herbicide application shall be conducted by certified applicators from the TOM organization after initial clearing and construction. Cutting of trees within SMZs must be accomplished by using either hand-held equipment or other appropriate clearing equipment, such as a feller-buncher. The method will be selected based on site specific conditions and topography to minimize soil disturbance and impacts to the SMZ and surrounding area. Disturbed soils in SMZs must be stabilized by appropriate methods immediately after the access or site is cleared. Stabilization must occur within the time frame specified in applicable storm water permits or regulations. Stumps within SMZs may be cut close to the ground but must not be removed or uprooted. Trees, limbs, and debris shall be prevented from falling into water bodies or immediately removed from streams, ditches, ponds, and wet areas using methods which will minimize dragging or scarring the banks or stream bottom. No debris will be left in the water or watercourse. Equipment will cross streams, ditches, or wet areas only at locations designated by TVA after the application of appropriate erosion control BMPs, and consistent with permit conditions or regulatory requirements.

5. Wetlands - In forested wetlands, tall trees will be cut near the ground, leaving stumps and roots in place. The cambium may be treated with herbicides applied by certified applicators from the TOM organization to prevent regrowth. Under story trees that must be initially cut and removed may be allowed to grow back or may be treated with tree growth regulators selectively to slow growth and increase the re-clearing cycle. The decision will be situationally made based on existing ground cover, wetland type, and tree species since tall tree removal may "release" under story species and allow them to quickly grow to "electrical clearance problem" heights. In many circumstances herbicides labeled for water and wetland use may be used in re-clearing.

   At substation, switching stations, and communications sites wetlands **must be avoided.**

6. Sensitive Area Preservation - If prehistoric or historic artifacts or features that might be of archaeological or historical significance are discovered during clearing, grading, borrow or fill operations, the activity shall immediately cease within a 100-foot radius, and a TVA project manager and environmental specialist and the TVA Cultural Resources Program Manager shall be notified. The site shall be protected and left as found until a determination about the resources, their significance, and site treatment is made by TVA's Cultural Resources Program. Work may continue beyond the finding zone and the 100-foot radius beyond its perimeter.

7. Water Quality Control - The contractor's clearing, grading, borrow and fill and/or disposal activities shall be performed using best management practices that will prevent erosion and entrance of spillage, contaminants, debris, and other pollutants or objectionable materials into

drainage ways, surface waters or ground water. Special care shall be exercised in refueling equipment to prevent spills. Fueling areas shall be remote from any sinkhole, crevice, stream or other water body. Open burning debris shall be kept away from streams and ditches and shall be incorporated into the soil. Only materials allowed to be burned under an open burning permit may be incorporated into the soil.

The clearing and grading contractor(s) and subcontractors will erect and (when TVA or contract construction personnel are unable) maintain BMPs such as silt fences on steep slopes and adjacent to any steam, wetland or other water body. BMPs will be inspected, by the TVA field engineer or other designated TVA or contractor personnel, routinely and at least as frequently as required by the permit or good management practices, and during periods of high runoff; any necessary repairs will be made as soon as practicable. BMP runoff sampling will be conducted in accordance with permit requirements. Records of all inspections and sampling will be maintained onsite, and copies of inspection forms and sampling results will be forwarded to the TVA environmental specialist.

8. Turbidity and Blocking of Streams - If temporary clearing, grading, borrow or fill activities must interrupt natural drainage, appropriate drainage facilities and erosion/sediment controls shall be provided to avoid erosion and siltation of streams and other water bodies or water conveyances. In Tennessee conditions of an Aquatic Resource Alteration Permit shall be met. Turbidity levels in receiving waters or at storm water discharge points shall be monitored, documented and reported if required by the applicable permit. Erosion and sediment control measures such as silt fences, water bars, and sediment traps shall be installed as soon as practicable after initial access, site, borrow, fill, or right-of-way disturbance; and after sequential disturbance of stabilized areas due to stepwise construction requirement in accordance with applicable permit or regulatory requirements.

   On rights-of-way mechanized equipment shall not be operated in flowing water except when approved; and then only to construct necessary stream crossings under direct guidance of TVA.

   Construction of stream fords or other crossings will only be permitted at approved locations and to current TVA design or construction access road standards. At any construction site material shall not be deposited in watercourses or within stream bank areas where it could be washed away by high stream flows. Any clearing debris which enters streams or other water bodies shall be removed immediately. Appropriate Corps of Engineers and state permits shall be obtained for stream or wetland crossings.

9. Air Quality Control - The clearing or grading contractor shall take appropriate actions to limit the amount of air emissions created by clearing and disposal operations to be well within the limits of clearing or burning permits and/or Forestry or local fire department requirements. All operations must be conducted in a manner which prevents nuisance conditions or damage to adjacent land, crops, dwellings, highways or people. If building renovation or demolition is involved the required air quality organization shall be notified the minimum 10 days in advance, and if the start date is delayed, re-notified to start the clock again.

10. Dust and Mud Control - Clearing, grading, borrow, fill, or transport activities shall be conducted in a manner which minimizes the creation of fugitive dust. This may require limitations as to type of equipment, allowable speeds, and routes utilized. Control measures such as water, gravel, etc., or similar measures may be used subject to TVA approval. On new construction sites and easements, the last 100 feet before an access road approaches a county road or highway shall be graveled to prevent transfer of mud on to the public road.

11. Burning - The Contractor shall obtain applicable permits and approvals to conduct controlled burning. The Contractor will comply with all provisions of the permit, notification or

authorization including burning site locations, controlled draft, burning hours, and such other conditions as stipulated. If weather conditions such as wind speed or wind direction change rapidly, the Contractor's burning operation may be temporarily stopped by TVA's field engineer. The debris to be burned shall be kept as clean and dry as possible and stacked and burned in a manner which produces the minimum amount of smoke. Residue from burning will be disposed of according to permit stipulations. No fuel starters or enhancements other than kerosene will be allowed.

12. Smoke and Odors - The Contractor will properly store and handle combustible and volatile materials which could create objectionable smoke, odor, or fumes. The Contractor shall not burn oil or refuse that includes trash, rags, tires, plastics, or other manufactured debris.

13. Vehicle Exhaust Emissions - The Contractor shall maintain and operate equipment in a manner which limits vehicle exhaust emissions. Equipment and vehicles will be kept within the manufacturer's recommended limits and tolerances. Excessive exhaust gases will be eliminated and inefficient operating procedures will be revised or halted until corrective repairs or adjustments are made.

14. Vehicle Servicing - Routine maintenance of personnel vehicles will not be performed on the site, right-of-way, or access route. However, if emergency or “have to” situations arise, minimal/temporary maintenance to personnel vehicles will occur in order to mobilize the vehicle to an off-site maintenance shop. Heavy equipment may have to be serviced on the right-of-way, site, or access route, except in designated sensitive areas. The clearing, grading, borrow, or fill contractor will properly maintain these vehicles with approved spill protection controls and countermeasures. If emergency maintenance in a sensitive or questionable area arises, the Area Environmental Program Administration or project manager will be consulted. All wastes and used oils will be properly recovered, handled, and disposed/recycled. Equipment shall not be temporarily stored in stream floodplains, whether overnight or on weekends or holidays.

15. Noise Control - The Contractor shall take steps to avoid the creation of excessive sound levels for employees, the public, or the site and adjacent property owners. Concentration of individual noisy pieces as well as the hours and locations of operation should be considered.

16. Noise Suppression - All internal combustion engines shall be properly equipped with mufflers. The equipment and mufflers shall be maintained at peak operating efficiency.

17. Sanitation - A designated representative of TVA or the clearing, grading, borrow, fill, or construction contractor shall contract a sanitary contractor who will provide sanitary chemical toilets convenient to all principal points of operation for every working party and at each construction step. The facilities shall comply with applicable federal, state, or local health laws and regulations. They shall not be located closer than 100 feet to any stream or tributary or to any wetland. The facilities shall be required to have proper servicing and maintenance, and the waste disposal contractor shall verify in writing that the waste disposal will be in state-approved facilities. Employees shall be notified of sanitation regulations and shall be required to use the toilet facilities.

18. Refuse Disposal - The clearing, grading, borrow, fill, or construction contractor and subcontractor(s) shall be responsible for daily cleanup and proper labeling , storage and disposal of all refuse and debris on the site produced by his or her operations and employees. Facilities which meet applicable regulations and guidelines for refuse collection will be required. Only approved transport, storage, and disposal areas shall be used. Records of waste generation shall be maintained for a site and shall be provided to the project manager and environmental specialist assigned to the project.

19. Brush and Timber Disposal (Initial Clearing) - For initial clearing, trees are commonly part of the contractors contract to remove as they wish. Trees may be removed from the site for lumber or pulp wood or they may be chipped or stacked and burned. All such activities must be coordinated with the TVA field engineer and the open burning permits, notifications and regulatory requirements must be met. On rights-of-way trees may be cut and left in place only in areas specified by TVA and approved by appropriate regulatory agencies. These areas may include sensitive wetlands or SMZs where tree removal would cause excessive ground disturbance or in very rugged terrain where windrowed trees are used as sediment barriers along the edge of the right-of-way, site, or access.

    Trees that have been cut may not be left on a substation, switching station, or communications site.

20. Restoration of Site - All disturbed areas, with the exception of farmland under cultivation and any other areas as may be designated by TVA's specifications, shall be stabilized in the following manner unless the property owner and TVA's engineer specify a different method:

    A. The subsoil shall be loosened to a minimum depth of 6 inches if possible and worked to remove unnatural ridges and depressions.

    B. If needed, appropriate soil amendments will be added.

    C. All disturbed areas will initially be seeded with a temporary ground cover such as winter wheat, rye, or millet, depending on the season. Perennials may also be planted during initial seeding if proper growing conditions exist. Final restoration and final seeding will be performed as line, site, or communications facilities construction is completed. Final seeding will consist of permanent perennial grasses such as those outlined in TVA's "A Guide for Environmental Protection and Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities." Exceptions would include those areas designated as native grass planting areas. Initial and final restoration will be performed by the clearing contractor with emphasis on using landscaping materials provided in guidelines for low maintenance native vegetation use.

    D. TVA holds the option, depending upon the time of year and weather condition, to delay or withdraw the requirement of seeding until more favorable planting conditions are certain. In the meantime, other stabilization techniques must be applied.

    E. Vegetation designated by the Federal Invasive Species Council must be eliminated at the work site and equipment being transported from location to location must be inspected to ensure removal and destruction of live material.

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Appendix VI – Tennessee Valley Authority Environmental Protection Procedures Right-of-Way Vegetation Management Guidelines

1.0 Overview

A. TVA must manage the vegetation on its rights-of-way (ROW) and easements to ensure emergency maintenance access and routine access to structures, switches, conductors, and communications equipment. In addition, TVA must maintain adequate clearance, as specified by the National Electrical Safety Code, between conductors and tall growing vegetation and other objects. This requirement applies to vegetation within the ROW as well as to trees located off the ROW.

B. Each year TVA assesses the conditions of the vegetation on and along its ROWs. This is accomplished by aerial inspections, periodic field inspections, aerial photography, and information from TVA personnel, property owners and the general public. Important information gathered during these assessments includes the coverage by various vegetation types, the mix of plant species, the observed growth, the seasonal growing conditions and the density of the tall vegetation. TVA also evaluates the proximity, height, and growth rate of trees adjacent to the ROW that may be a danger to the line or structures.

C. TVA ROW Specialists develop a vegetation re-clearing plan that is specific to each line segment and is based on terrain conditions, species mix, growth, and density.

2.0 ROW Management Options

A. TVA uses an integrated vegetation management approach. In farming areas, TVA encourages property owner management of the ROW using low growing crops. In dissected terrain with rolling hills and interspersed woodlands, TVA uses mechanical mowing to a large extent.

B. When slopes become hazardous to farm tractors and rotary mowers, TVA may use a variety of herbicides specific to the species present with a variety of possible application techniques. When scattered small stands of tall growing vegetation are present and access along the ROW is difficult, or the path to such stands is very long, herbicides may be used.

C. In very steep terrain, in sensitive environmental areas, in extensive wetlands, at stream banks and in sensitive property owner land use areas, hand clearing may be utilized. Hand clearing is recognized as one of the most hazardous occupations documented by the Occupational Health and Safety Administration. For that reason, TVA is actively looking at better control methods, including use of low volume herbicide applications, occasional single tree injections, and tree growth regulators.

D. TVA does not encourage tree re-clearing by individual property owners because of the high hazard potential of hand clearing, possible interruptions of the line, and electrical safety considerations for untrained personnel that might do the work. Private property owners may re-clear the ROW with trained re-clearing professionals.

E. Mechanical mowers not only cut the tall saplings and seedlings on the ROW, they also shatter the stump and the supporting near surface root crown. The tendency of resistant species is to re-sprout from the root crown and shattered stumps can produce a multi-stem dense stand in the immediate area. Repeated use of mowers on short cycle re-clearing with many original stumps re-growing in the above manner can create a single species thicket or monoculture. With the original large root system and multiple stems, the resistant species can produce re-growth at the rate of 5-10 feet in a year. In years with high rainfall the growth can reach 12-15 feet in a single year. These dense, monoculture stands can become nearly impenetrable for even large tractors. Such stands have low diversity, little wildlife food or nesting potential, and become a property owner concern. Selective herbicide application may be used to control monoculture stands.

F. TVA encourages property owners to sign an agreement to manage ROWs on their land for wildlife under the auspices of "Project Habitat," a joint project by TVA, BASF, and wildlife organizations, e.g., National Wild Turkey Federation, Quail Unlimited, and Buckmasters. The property owner maintains the ROW in wildlife food and cover with emphasis on quail, turkey, deer or other wildlife. A variation used in or adjacent to developing suburban areas is to sign agreements with the developer and residents to plant and maintain wildflowers on the ROW.

G. TVA places strong emphasis on managing ROWs in the above manner. When the property owners do not agree to these opportunities, TVA must maintain the ROW in the most environmentally acceptable, cost-effective, and efficient manner possible.

3.0 Herbicide Program

A. TVA has worked with universities (such as Mississippi State University, University of Tennessee, Purdue University and others), chemical manufacturers, other utilities, U.S. Department of Transportation, U.S. Fish and Wildlife, and U.S. Forest Service personnel to explore options for vegetation control. The results have been strong recommendations to use species specific, low volume, herbicide applications in more situations. Research, demonstrations, and other ROW programs show a definite improvement of ROWs treated with selective low volume applications of new herbicides using a variety of application techniques and timing.

B. Low volume herbicide applications are recommended since research demonstrates much wider plant diversity after such applications. There is better ground erosion protection and more wildlife food plants and cover plants develop. In most situations there is increased development of wild flowering plants and shrubs. In

conjunction with herbicides, the diversity and density of low growing plants provide control of tall growing species through competition.

C. Wildlife managers often request the use of herbicides in place of rotary mowing in order to avoid damage to nesting and tunneling wildlife. This method retains ground cover year around with a better mix of food species and associated high protein insect populations for birds in the right seasons. Most also report less damage to soils (even when compared with rubber tired equipment).

D. Property owners interested in tree production often request the use of low volume applications rather than hand or mechanical clearing because of the insect and fungus problems in damaged vegetation and debris left on ROW. The insect and fungus invasions, such as pine tip moth, oak leaf blight, sycamore and dogwood blight, etc., are becoming widespread across the nation.

E. Best Management Practices (BMPs) governing application of herbicides are contained within "*A Guide for Environmental Protection and Best Management Practices for Tennessee Valley Authority Transmission Construction and Maintenance Activities",* which is incorporated by reference. Herbicides can be liquid, granular, or powder and can be applied aerially or by ground equipment and may be selectively applied or broadcast, depending on the site requirements, species present, and condition of the vegetation. Water quality considerations include measures taken to keep herbicides from reaching streams whether by direct application or through runoff of or flooding by surface water. "Applicators" must be trained, licensed, and follow manufacturers' label instructions, Environmental Protection Agency (EPA) guidelines, and respective state regulations and laws.

F. When herbicides are used, their potential adverse impacts are considered in selecting the compound, formulation, and application method. Herbicides that are designated "Restricted Use" by EPA require application by or under the supervision of applicators certified by the respective state control board. Aerial and ground applications are done either by TVA or by contractors in accordance with the following guidelines identified in the TVA BMP manual:

1. The sites to be treated are selected and application directed by the appropriate TVA official.
2. A preflight walking or flying inspection is made within 72 hours prior to applying herbicides aerially. This inspection ensures that no land use changes have occurred, that sensitive areas are clearly identified to the pilot, and that buffer zones are maintained.
3. Aerial application of liquid herbicides will normally not be made when surface wind speeds exceed five miles per hour, in areas of fog, or during periods of temperature inversion.
4. Pellet application will normally not be made when the surface wind speeds exceed ten miles per hour, or on frozen or water saturated soils.

5. Liquid application is not performed when the temperature reaches 95 degrees (F) or above.
6. Application during unstable, unpredictable, or changing weather patterns is avoided.
7. Equipment and techniques are used that are designed to ensure maximum control of the spray swath with minimum drift.
8. Herbicides are not applied to surface water or wetlands unless specifically labeled for aquatic use. Filter and buffer strips will conform at least to federal and state regulations and any label requirements. The use of aerial or broadcast application of herbicides is not allowed within a streamside management zone (SMZs) (200 feet minimum width) adjacent to perennial streams, ponds, and other water sources. Hand application of certain herbicides labeled for use within SMZs is used only selectively.
9. Buffers and filter strips (200 feet minimum width) are maintained next to agricultural crops, gardens, farm animals, orchards, apiaries, horticultural crops, and other valuable vegetation.
10. Herbicides are not applied in the following areas or times: (a) in city, state, and national parks or forests or other special areas without written permission and/or required permits (b) off the right-of-way and (c) during rainy periods or during the 48- hour interval prior to rainfall predicted with a 20 percent or greater probability by local forecasters, when soil active herbicides are used.

G. Table 1 - Herbicides Currently Used on TVA ROWs

Trade Name	Active Ingredients	Label Signal Word
Accord	Glyphosate/Liquid	Caution
Arsenal	Imazapyr/Liquid/Granule	Caution
Escort	Metsulfuron Methyl/ dry flowable	Caution
Garlon	Triclopyr/Liquid	Caution
Garlon 3A	Triclopyr/Liquid	Danger
Transline	Clopyralid/Liquid	Caution
Pathfinder II	Triclopyr/RTU	Caution
Krenite S	Fosamine Ammoinium	Caution
Spike 20P	Tebuthiuron	Caution
Chopper	Imazapyr/RTU	Caution
Roundup	Glyphosate/Liquid	Caution
Roundup Pro	Glyphosate	Caution

H. Table 2 - Pre-Emergent Herbicides Currently Used for Bare Ground Areas on TVA ROWs and Substations

Trade Name	Active Ingredients	Label Signal Word
Topsite	Diuron/Imazapyr	Caution
SpraKil SK-26	Tebuthiuron and Diuron	Caution
Sahara	Diuron/Imazapyr	Caution

I. Table 3 - Tree Growth Regulators (TGRs) Currently Used on TVA ROWs - TGRs may be used on tall trees that have special circumstances where they must be trimmed on a regular cycle.

TGR	Flurprimidol	Caution
Profile 2SC	TGR-paclobutrazol	Caution

J. TVA currently utilizes Activate Plus, manufactured by Terra, as an adjuvant to herbicides to improve the performance of the spray mixture. Application rates are consistent with the EPA-approved label. U. S. Fish and Wildlife has expressed some concern on toxicity effects of surfactants on aquatic species. TVA is working in coordination with Mississippi State University and chemical companies to evaluate efficacy of additional low-toxicity surfactants, including LI700 as manufactured by Loveland Industries, through side-by-side test plots in the streamside management zones of area transmission lines.

K. The herbicides and TGRs listed above have been evaluated in extensive studies in support of registration applications and label requirements. Many have been reviewed in the U.S. Forest Service Vegetation Management Environmental Impact Statements and those evaluations are incorporated here by reference. The result of these reviews has been a consistent finding of limited environmental impact beyond that of control of the target vegetation. All the listed herbicides have been found to be of low environmental toxicity when applied by trained applicators following the label and registration procedures, including prescribed measures, such as buffer zones, to protect threatened and endangered species.

L. The rates of application utilized are those listed on the EPA approved label and consistent with utility standard practice throughout the Southeast. TVA currently uses primarily low volume applications of foliar and basal applications of Accord (Glyphosate) and Accord (Glyphosate)-Arsenal (Imazapyr) tank mixes. Glyposate is one of the most widely used herbicidal active ingredients in the world, and has been continuously the subject of numerous exhaustive studies and scrutiny to determine it's potential impacts on humans, animals and the environment.

4.0 Accord

A. Accord is labeled for vegetation management in forestry and utility ROW applications. It has a full aquatics label, and can be applied to emergent weeds in all bodies of fresh and brackish water. There is limited restriction on the use of treated water for irrigation, recreation or domestic purposes. Accord is applied to the foliage of actively growing plants. The active ingredient is absorbed through the leaves and rapidly moves throughout the plant. Glyphosate prevents the plant from producing

amino acids that are unique to plants and which are building blocks of plant proteins. The plant, unable to make proteins, stops growing and dies.

B. The favorable environmental fate characteristic of Accord herbicide and its major metabolite (breakdown product) aminomethylphosphonic acid (AMPA) is well known. Continuing research is underway with more than 400 studies conducted to date in the laboratory and under field use conditions. These studies show rapid breakdown, little soil or plant debris retention and little vertical movement into soil below the surface.

C. Glyphosate is naturally degraded by microbes in soil and water under both aerobic (with oxygen) and anaerobic (without oxygen) conditions. AMPA is further degraded in soil and sediments to: phosphorus, nitrogen, hydrogen and carbon dioxide. Glyphosate binds rapidly and completely to a wide range of soils and sediment when introduced into the environment. This essentially eliminates movement in the soil. The average half-life of glyphosate in soils is less than 45 days. Half-life for the dissipation of glyphosate in environmental waters ranges from 1.5 to 14 days.

D. Glyphosate is non-toxic to birds, mammals and bees and has been shown not to bioaccumulate since it acts in plants through an enzyme system that does not exist in animals or humans.

5. Arsenal

A. Arsenal (imazapyr) has been similarly tested and it is found to have low leaching potential in soils. When available on or in the soil it is broken down rapidly by soil microbes to naturally occurring compounds. When not available, Imazapyr is bound tightly to soil colloids and is unavailable for movement. The half-life in soil is 25 to 65 days.

B. Extensive chronic and acute toxicity studies have made Arsenal an EPA classified herbicide as practically non-toxic to humans, mammals, birds, fish, aquatic invertebrates and insects. The chronic studies demonstrate that Imazapyr is non-teratrogenic, non-mutagenic, and not a carcinogen.

C. The mode of action suppresses amino acids of the plant via an enzyme system containing acetohydroxy acid synthase. This enzyme system does not exist in other forms of life including humans and animals.

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Appendix VII – Watercourse Crossings Along the Proposed Transmission Line Route for Center Point-Moss Lake 230/115-kV Transmission Line and Moss Lake Substation

Stream Identification	Sequence Identification	Stream Type	Drainage	SMZ[1] Category	Notes
as2	001	Perennial	Unnamed tributary to Town Creek	B (200 feet)	Enters Moss Lake Substation site; located in existing maintained distributor ROW;[2] crosses proposed ROW
as3	002	Pond	No visible outflow	A (RB[3]-65 feet; LB[4]-BMPs[5])	SMZ for pond; existing ROW
as5	003	Perennial	Unnamed tributary to Crane Eater Creek	B (200 feet)	4- to 5-foot-wide and 1- to 2-foot-deep channel that flows from wooded area into existing, maintained distributor ROW, where it is filled in and significantly degraded
as6	004	Intermittent	Unnamed tributary to Crane Eater Creek	A (100 feet)	Varies from 5- to 10-foot-wide and 1- to 2-foot-deep channel that flows from wooded area into existing ROW, where it is filled in
as7	005	Perennial	Unnamed tributary to Crane Eater Creek	B (250 feet)	Located in existing maintained distributor ROW; crosses proposed ROW
as9	006	Pond	Unnamed tributary to Crane Eater Creek	A (RB-65 feet; LB-BMPs)	Located in existing maintained distributor ROW; crosses proposed ROW
as11	007	Perennial	Crane Eater Creek	B (200 feet)	Located in existing maintained distributor ROW; crosses proposed ROW
as12	008	Perennial	Coosawattee River	B (200 feet)	DCH[6] Unit 5; riparian zone maintained 40 to 50 feet wide in existing distributor ROW; crosses the proposed ROW
asb9	009	Intermittent	Unnamed tributary to Coosawattee River	A (130 feet)	Small riparian area in agricultural field
asb10	010	Perennial	Unnamed tributary to Coosawattee River	B (250 feet)	Small riparian area in agricultural field
asl01	011	Intermittent	Unnamed tributary to Coosawattee River	A (130 feet)	Small riparian area in agricultural field; adjacent to SR 225
asl02	012	Perennial	Unnamed tributary to Conasauga River	B (250 feet)	Forested riparian zone; adjacent to Wetland 002
asb12	013	Perennial	Conasauga River	B (250 feet)	DCH Unit 5; wooded riparian zone

Stream Identification	Sequence Identification	Stream Type	Drainage	SMZ[1] Category	Notes
asb13	014	Intermittent	Unnamed tributary to Conasauga River	A (130 feet)	Small riparian area in agricultural field
asba01	015	Intermittent	Unnamed tributary to Conasauga River	A (130 feet)	Small riparian area in agricultural field
asl04	016	Perennial	Conasauga River	B (250 feet)	DCH Unit 5; riparian zone 50 to 60 feet
asb05	017	Perennial	Unnamed tributary to Conasauga River	B (250 feet)	Wooded riparian area on left bank
asl07	018	Perennial	Conasauga River	B (250 feet)	DCH Unit 5; riparian zone 50 to 60 foot left bank; fully wooded on right bank
asb25	019	Intermittent	Unnamed tributary to Conasauga River	A (130 feet)	Minimal riparian area
asb26	020	Perennial	Unnamed tributary to Conasauga River	B (250 feet)	Minimal riparian area
asl001	021	Perennial	Unnamed tributary to Conasauga River	B (250 feet)	Minimal riparian area; outflow from pond sequence identification 022
asl01p	022	Pond	Unnamed tributary to Conasauga River	A (RB-65 feet; LB-BMPs)	
as13	023	Intermittent	Unnamed tributary to Conasauga River	A (100 feet)	Minimal riparian area.
asl19	024	Intermittent	Unnamed tributary to Conasauga River	A (130 feet)	Fully wooded riparian area
asl20	025	Perennial	Unnamed tributary to Conasauga River	B (250 feet)	Fully wooded riparian area
asl24	026	Perennial	Unnamed tributary to Conasauga River	B (250 feet)	Fully wooded riparian area
asl28	027	Intermittent	Unnamed tributary to Conasauga River	A (130 feet)	Headwater stream
asb27	028	Perennial	Unnamed tributary to Conasauga River	B (250 feet)	Runs through Wetland 012
asb28	029	Perennial	Unnamed tributary to Conasauga River	B (250 feet)	Runs along the southwest corner of Center Point Substation site

[1] **SMZ** = Streamside management zone
[2] **ROW** = Right-of-way
[3] **RB** = Right bank
[4] **LB** = Left bank
[5] **BMP** = Best Management Practices according to Muncy (1999)
[6] **DCH** = Designated Critical Habitat